WHAT IS CLAIMED IS:

An exposure apparatus, comprising: an illumination optical system for illuminating a pattern of a resticle with laser light outputted from a continuous emission laser;

a projection optical system for projecting the illuminated pattern onto a subject to be exposed; and

an interferometer operable while using laser light outputted from said continuous emission laser.

- An apparatus according to Claim 1, 2. wherein said interferometer includes a reflection member disposed on a stage for holding the subject.
- An apparatus according to Claim 1, 3. wherein said interferometer is operable to form an interference fringe for measurement of the wavefront aberration of said projection optical system.
- An apparatus according to Claim 1, 4. wherein said continuous emission laser is a continuous emission excimer laser having an emission wavelengt n of 193 nm or 157 nm.

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- 5. An apparatus according to Claim 1, wherein said interferometer is of Fezeau type.
- 6. An apparatus according to Claim 1,
 further comprising a stabilization mechanism for
 stabilizing the emission wavelength of said
 continuous emission laser.
- 7. An apparatus according to Claim 1,

 10 further comprising a semi-transmission mirror
 disposed between said continuous emission laser
 and said illumination optical system, for
 directing a portion of the laser light outputted
 from said continuous emission laser to said

 15 interferometer.
 - 8. An apparatus according to Claim 7, further comprising an optical system operable to transform laser light outputted from said continuous emission laser into incoherent light and also to direct the same to the reticle, wherein said semi-transmission mirror is disposed between said continuous emission laser and said optical system, and wherein said semi-transmission mirror directs laser light not transformed into coherent light to said interferometer.

- g. An apparatus according to Claim 1, further comprising an optical path switching mirror for interchanging the path of the laser light outputted from said continuous emission laser, between a light path directed to said illumination optical system and a light path directed to said interferometer.
- 10. An apparatus according to Claim 9,

 further comprising an optical system operable to
 transform laser light outputted from said
 continuous emission laser into incoherent light
 and also to direct the same to the reticle, wherein
 said optical path switching mirror is disposed

 between said continuous emission laser and said
 optical system, and wherein said optical path
 switching mirror directs laser light not
 transformed into coherent light to said
 interferometer.

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11. An apparatus according to Claim 1, further comprising a photoelectric converter for taking an image of an interference fringe produced by said interferometer, and an operation unit for analyzing an output of said photoelectric converter to control said projection optical system.

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- 12. An apparatus according to Claim 1, further comprising a pulse emission laser for injecting laser light of a predetermined wavelength into said continuous emission laser.
- 13. A device manufacturing method,
 comprising the steps of:
- exposing a wafer to a pattern by use of

 10 an exposure apparatus as recited in Claim 1; and

 developing the exposed wafer.